

# Health care professionals and adolescent vaccination

## A call for intervention research

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**I**n their recently published research study, Gargano et al. found that a physician's recommendation and parental health beliefs had significant effects on adolescent vaccination rates and on parental intentions to vaccinate. This research replicates the findings of a number of human papillomavirus (HPV) vaccine-focused research studies, but explores new territory by focusing on all recommended adolescent vaccines: meningococcal-conjugate (MCV4), HPV, influenza, and tetanus, diphtheria, and acellular pertussis (Tdap) vaccines. Although Gargano et al.'s study is relatively small in scale and focuses on only one county in Georgia, their results are consistent with many other research reports, suggesting that their findings are robust and replicable. Most published intervention studies have targeted parents and young adults, with little focus on health care professionals. However, given the centrality of physician recommendation in adolescent vaccination, as shown by Gargano et al., it is clear that the time has come to develop and evaluate interventions that help physicians and other health care professionals to more effectively implement strong and routine recommendations for all adolescent platform vaccines.

receipt of meningococcal-conjugate (MCV4), human papillomavirus (HPV), and tetanus, diphtheria, and acellular pertussis (Tdap) vaccines. For adolescents who had not yet received a given vaccine, doctor recommendation was significantly associated with parental intention to vaccinate with MCV4, HPV, and Tdap.

The question arises, however, what can be made of the results of this relatively small-scale study (n = 114) from a single county in the state of Georgia in the United States, particularly given that the central importance of health care professional (HCP) recommendation/non-recommendation has been documented in several previous research studies on HPV vaccination.<sup>2–7</sup> In fact, a recently published review paper on adolescent HPV immunization identified 17 research articles related to HCP recommendation of HPV vaccination.<sup>8</sup> Moreover, research on physicians tends to corroborate parental reports, indicating inconsistent practices around HPV vaccine recommendations and a tendency among some providers to delay initiation of vaccination until after the targeted age of 11–12 years,<sup>9–11</sup> an issue also summarized in the aforementioned review article.<sup>8</sup>

Where Gargano et al. make a significant contribution and move the field forward is in their inclusion of vaccines other than HPV. In a chapter published in 2013 that I co-authored we pointed out that the number of behavioral science research studies on HPV vaccination far outstripped research on other adolescent vaccines.<sup>12</sup> This disparity has only risen over the past year. Although the fascination of behavioral and social science researchers with HPV vaccination is somewhat understandable, there are consequences to this

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Gargano et al. report the results of an interesting study on parental attitudes about adolescent vaccination.<sup>1</sup> One of their primary findings is that physician recommendation of vaccination is a primary reason for parents to vaccinate or intend to vaccinate their adolescent sons and daughters. Doctor recommendation was a significant predictor of adolescent

fairly exclusionary focus on one vaccine. For one, it reinforces the notion that HPV vaccine is different from other vaccines, which may lead it to be treated differently by parents and HCPs compared with the other routinely recommended adolescent platform vaccines. Furthermore, it suggests that we have relatively little to learn about influenza, MCV4, and Tdap vaccination of adolescents, which is certainly untrue, as evidenced by the research reported by Gargano et al. A recent Australian article published by Marshall et al. focused on parental attitudes about a new meningococcal serogroup B vaccine.<sup>13</sup> In this study, as in Gargano et al.'s, physician recommendation was one of the strongest predictors of parental intent to vaccinate. The fact that a study from a county within the state of Georgia reports findings comparable to those from the state of South Australia suggests that Gargano's et al.'s results are robust and meaningful, despite the relatively small sample size and narrow geographical range.

A second set of findings from Gargano et al. is that parental health beliefs are associated with vaccine receipt and intention. As with physician recommendation, these kinds of associations are well-documented in the vaccine literature, and research on parental health beliefs and immunization goes back to the early days of polio vaccination.<sup>14</sup> Nonetheless, it is helpful to see confirmation of these findings across several adolescent vaccines and it is a useful reminder that parental beliefs, which may be modifiable, can act as an obstacle to, or facilitator of, adolescent vaccination.

Given the centrality of health care provider recommendation to adolescent vaccination, as identified by Gargano et al. and others, we are led to consider what can be done to help ensure that physicians and other HCPs routinely and strongly recommend all adolescent vaccines, particularly during the targeted ages of 11–12. Clearly, what is needed is a concerted effort to develop and evaluate interventions that target HCPs with the goal of increasing adolescent vaccination rates, particularly for HPV and influenza vaccines, which, nationally, have lagged behind MCV4 and Tdap.<sup>15,16</sup> To date,

most HPV vaccine intervention research has focused on parents and youth/young adults.<sup>17</sup> I am aware of only one published study that has tested an intervention with HCPs.<sup>18,19</sup> In this study an electronic medical record decision support intervention showed some promising results. Barring significant and wide-spread changes in adolescent immunization policy, I would argue that our best opportunity to increase adolescent vaccination rates will be to identify and implement effective ways to help HCPs make strong, routine recommendations for all adolescent platform vaccines. Gargano et al. confirm the importance of a physician's recommendation in parental acceptance of adolescent vaccination. The time has come to begin to act on these findings to ensure that our youth are maximally protected from the potentially harmful effects of meningococcal, HPV, influenza, and pertussis infections.

#### Disclosure of Potential Conflicts of Interest

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